

Claims

What is claimed is:

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1. A method for eliciting information, useful to a user, from first and second collections of entities or resources with explicit and/or implicit, static and/or dynamic relations therebetween, the method comprising the steps of:

2 obtaining the first collection of entities and the second collection of entities;
3 obtaining affinity values, including, for each given one of the entities, a
4 respective affinity value for the given entity and each respective one of the other
5 entities of the collection;
6

7 initializing significance values for each of the entities; and
8

9 iteratively calculating updated significance values for each entity, based on
10 the affinities and on the significance values prior to the iterative update, until a
11 predetermined condition is reached;

12 obtaining the useful information based on the significance values after the
13 final iteration of the step of iteratively calculating.

1 2. A method as recited in claim 1, wherein the step of obtaining affinity
2 values includes obtaining, for each one of the given entities in the first collection, a
3 respective affinity value for the given entity and each respective one of the entities
4 in the second collection.

1 3. A method as recited in claim 1, wherein the step of obtaining first and
2 second sets of entities includes obtaining a single set of entities as both the first set
3 and the second set.

1 4. A method as recited in claim 3, wherein the step of obtaining affinity
2 values includes obtaining, for each one of the given entities in the single set of
3 entities, a respective affinity value for the given entity and each respective other
4 one of the entities in the single set.

1 5. A method as recited in claim 1, wherein the step of obtaining affinity
2 values includes the steps of:
3 obtaining a set of raw affinity values; and
4 deriving a set of derived affinity values from the raw affinity values.

1 6. A method as recited in claim 5, wherein the step of deriving derived
2 affinity values includes using one of:
3 a sum operation,
4 an average operation,
5 a min operation,
6 a max operation, and
7 a linear combination.

1 7. A method as recited in claim 1, wherein:
2 the method further includes the step of computing similarity values between
3 the entities based on the affinity values; and
4 the step of iteratively calculating updated significance values includes
5 iteratively calculating updated significance values based on the affinities and on the
6 significance values.

1 8. A method as recited in claim 7, further comprising the step of iteratively
2 calculating a updated principal affinity component value for each entity of interest
3 based on the affinities and similarities.

1 9. A method as recited in claim 8, wherein:
2 the step of computing similarity values includes computing a similarity matrix;
3 and
4 the step of iteratively calculating a updated principal affinity component value
5 includes calculating a non-principal eigenvector of the similarity matrix.

1 10. A method as recited in claim 8, wherein the step of obtaining the useful
2 information includes obtaining the useful information based on the updated principal
3 affinity component values.

1 11. A method as recited in claim 10, wherein the step of obtaining the useful
2 information based on the updated principal affinity component values includes
3 obtaining a cluster.

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